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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact on the Existing	)	
Television Broadcast Service	)	
	)	
Review of Technical and Operational	)	MM Docket No. 87-268
Requirements: Part 73-E	)	
	)	
Reevaluation of the UHF Television	)	
Channel and Distance Separation	)	
Requirements of Part 73	)	

COMMENTS OF M/A-COM MAC

M/A-COM's Microwave Associates Communications Division ("MAC")[1] submits these comments in response to the Tentative Decision and Further Notice of Proposed Rulemaking herein ("FNOI"), FCC 88-288, released September 1, 1988. MAC's comments are limited to the question of spectrum for video relay links.

The Commission's FNOI raises questions about the availability of microwave spectrum for point-to-point relay of advanced television signals.[2] As

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[1]MAC manufactures and sells point-to-point microwave equipment for use by broadcast stations as studio-to-transmitter links and by cable TV systems as video relay links.
[2]FNOI, para. 97-102.

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one of the leading supplier of point-to-point microwave equipment for this purpose, MAC is concerned that this promising new broadcast technology could be stifled by the inadequate spectrum for studio-to-transmitter links. However, work done by the Commission's Advisory Committee may suggest a solution, at least during an interim period.

Virtually all of the frequency bands allocated for broadcast studio-to-transmitter links are heavily congested in the major metropolitan areas. These include the following bands:

1990- 2110 MHz
2450- 2483 MHz
6875- 7125 MHz
12700-13250 MHz.

Only the 17.7-19.7 GHz band is relatively uncongested,[3] but propagation characteristics at this frequency range render it unsatisfactory for long path lengths.[4]

It may be possible to redesign current STL technology to accommodate a 9 MHz ATV signal. Current technology uses FM modulation and channel bandwidths from 17 MHz to 25 MHz. MAC has begun analyzing whether

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[3]To the best of our knowledge, M/A-COM MAC is the only manufacturer of video microwave links in this band; all other products on the market are digital links.

[4]We note that broadcasters may also be licensed in the 21.2-23.6 GHz band under Part 94 rules, and in the 31.0-31.3 GHz band. However, both of these bands are suitable only for relatively short path lengths, and the 31.0-31.3 GHz is unsuitable for broadcast STL use because no protection is afforded from interference by other licensees.

this is feasibility, taking into account the traditional requirement to carry audio subcarriers as well as video on the link. We hope to be able to provide additional information to the Commission within the next six months.

We are extremely concerned about an ATV standard that either uses a 6 MHz augmentation channel or a 6 MHz incompatible simulcast channel.[5] Current STL equipment cannot handle a doubling of bandwidth, nor is the spectrum available to assign an additional STL channel to each broadcaster.

However, if the 6 MHz incompatible simulcast channel approach is chosen, then only a temporary solution to the STL spectrum problem is needed rather than a permanent solution, because the simulcasting would proceed only for some interim period of time. If so, then perhaps the government spectrum discussed in the FNOI[6] could be used. This spectrum (4400-4990 MHz and 7750-7900 MHz) appears to be lightly used, particularly near major metropolitan areas. We urge the Commission to begin examining this possibility, and to undertake formal discussions with the Interdepartment Radio Advisory Committee as part of this examination. The key factor that makes this approach worthy of consideration is that broadcaster use of these fre-

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[5]This means that for some interim period of time, a broadcaster would simultaneously broadcast an NTSC signal on his present channel and an incompatible ATV signal on a separate 6 MHz channel.

[6]Para. 77. We note that this spectrum was proposed by the Advisory Committee as a possibility for omnidirectional broadcasting of ATV signals, and quite properly has been rejected by the Commission.

quencies would be temporary rather than permanent, only so long as simulcasting of NTSC and ATV signals is needed.

In conclusion, we are concerned that the lack of microwave spectrum for studio-to-transmitter links will stifle the development of advanced television technology. We urge the Commission to consider the temporary use of government frequencies as a way to resolve this problem, if a 6 MHz incompatible simulcast format is chosen for ATV.

Respectfully submitted,

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